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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/692,846	10/19/2000	Courtney C. Konopka	66161	6249

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CHICAGO, IL 60603-3406

EXAMINER

SPOONER, LAMONT M

ART UNIT	PAPER NUMBER
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2654

DATE MAILED: 08/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/692,846

Applicant(s)

KONOPKA ET AL.

Examiner

Lamont M. Spooner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17, 26-30 and 32-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 26-30 and 32-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

### ***Response to Arguments***

2. Applicant's arguments filed 4/12/05 have been fully considered but they are not persuasive.
3. In response to Applicant's arguments, filed 4/12/05, regarding claim 17, pages 13-16, stating "When the local device does not recognize any of the keywords it sends the speech over a network to a remote device that has more extensive speech recognition capabilities." and that "White et al. do not disclose "searching for an

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attention word ... and switching, upon finding the attention word, to a second context ...

The Examiner cannot concur with this assessment.

While the applicant is permitted to define a particular word/phrase, "attention word" does not define a standard to an artisan. The Applicant argues an "attention word" functions, for example, to identify the user, to avoid false detections of requests and to distinguish between regular conversations and background noise." This is not claimed. As claimed, the "keywords" of White, appropriately define the limitations.

White further teaches, "word spotting " searching (by scanning) for a keyword, (C.13.line 60-C.14.lines 10-his "wake up" command and then further proceeds to remote resources, C.6.lines 31-55-). The Applicant has stated "when the local device does not recognize any of the keywords...", page 14. However, the Examiner cannot concur. White "word spots", and in the least recognizes "wake up" (C.13.line 60-C.14.line 10), searches for a keyword, and utilizes remote resources to perform the needs, that are associated with the keyword, upon finding the attention/keyword, as explained in the previous rejection's cited column and lines.

In response to applicant's argument that Junqua, Giuliani, and White do not teach or suggest, "wherein the natural language interface abstracts each of the plurality of devices into a respective one of a plurality of grammars and a respective one of a plurality of lexica corresponding to each of the plurality of devices." The Examiner cannot concur. Junqua teaches having a plurality of devices coupled to the natural language interface module, Junqua fig. 1, his natural language parser 26 and his digital tuner 40 and his recorder 44, C.2.lines 2-C.3.line 35-Junqua's natural language interface

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abstracts the plurality of devices, Fig. 2, C.3.lines 54-24-his semantic frame data structure... "whose domain is tuner commands"-is interpreted as his abstraction of devices, one of his digital tuner and recorder, his digital tuner, and recorder-The grammar is necessarily specific to each unit wherein the recorder is associated with specific recording grammar, and the tuner is associated with channel selection grammar as the natural language parser, 26, distinguishes between the two respective grammars and lexica, Fig 2-his domain specific knowledgebase, C.3.lines 60-C.4.lines 4-as explained, the natural language input by the speaker "Record me a comedy in which Mel Brooks stars and is shown before January 23<sup>rd</sup>"-enters the "grammar" and commands specific to the recorder.

In response to applicant's arguments, regarding claims 7 and 8, p. 20, searching for a natural language request upon receipt of a keyword. Applicant does not claim, "searching for a natural language request upon receipt of a keyword.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 17 is rejected under 35 U.S.C. 102(e) as being anticipated by White et al (White, 6,408,272 b1)

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As per claim 17, White et al teach a method of speech recognition comprising (figure 2):

searching for an attention word based on a first context including a first set of grammar models (figure 2, his speech recognition engine 40, col. 6, lines 31-55, -the first set of grammar models resident upon the local device); and

switching upon finding the attention word to a second context to search for an open- ended user request, wherein second context includes a second set of models, grammar and lexicons (col. 6, lines 45-55, col. 7, lines 2-16, col. 16, lines 1-15, col. 15, lines 14-20- White "word spots", searches for a keyword, and utilizes, switches to remote resources, including a second context, a second set of models and lexicons to perform the needs, that are associated with the keyword, upon finding the attention/keyword, also C.13.line 60-C.14.lines 10-his "wake up" command and then further proceeds to remote resources, C.6.lines 31-55).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-16 and 26-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Junqua et al (Junqua, 6,324,512 B1) in view of Giuliani et al (Giuliani, Hands free Continuous Speech Recognition in Noisy Environment Using a Four Microphone Array) and White et al (White, 6,408,272 B1)

As per claims 1 and 5, Junqua et al teach a natural language interface control system for operating a plurality of devices comprising (figure 1):

" feature extraction module coupled to the first microphone" this signal processing component 68, col. 15, lines 53-67);

"a speech recognition module coupled to the feature extraction module, utilizes hidden Markov models; (His speech recognizer 20, col. 2, lines 35-55, Fig. 4); and

"A device interface coupled to the natural interface module "(His natural language parser 26, col. 2, lines 52-61), "wherein the natural language interface module is for operating a plurality of devices coupled to the device interface based upon non-prompted, open- ended natural language request from a user" (his abstract, lines 1-5; col. 2, lines 62-67 his unified access controller 30, his digital tuner 40 and his recorder 44, col. 3, lines 9-17).

wherein the natural language interface module abstracts each of the plurality of devices into a respective one of the different grammars and a respective one of a plurality of lexica corresponding to each of the plurality of devices (Junqua fig. 1, his natural language parser 26 and his digital tuner 40 and his recorder 44, C.2.lines 2-C.3.line 35-Junquas natural language interface as cited in the previous rejection, abstracts the plurality of devices, his digital tuner, and recorder-The grammar is necessarily specific to each unit wherein the recorder has recording grammar, and the tuner has channel selection grammar as the natural language parser, 26, distinguishes between the two respective grammars and lexica, C.3.lines 60-C.4.lines 4-as explained, the natural language input by the speaker "Record me a comedy in which Mel Brooks

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stars and is shown before January 23<sup>rd</sup>-enters the "grammar" and commands specific to the recorder).

It is noted that Junqua et al teach the claimed invention but does not explicitly teach a 3 dimensional microphone array. However, this feature is well known in the art as evidenced by Giuliani et al who teach a four microphone array. Therefore, one of ordinary skill in the art at the time invention was made would have it obvious to substitute the microphone taught by Junqua by the array of microphone taught by Giuliani because it would improve the signal quality in a noisy environment (see Giuliani page 860).

It is further noted that the combination teaches the claimed invention but does not explicitly teach wherein the speech recognition module can switch between different acoustic models and different grammars, wherein at least one of the different acoustic models and at least one of the different grammars is downloaded over a network. However, this feature is well in the art as evidenced by White et al who teach a distributed voice interface system that includes a remote system, which may communicate with a number of local devices where data can be downloaded from the remote system to the local devices at col. 3, lines 25-32 and col. 16, lines 1-15, and teaches having the natural language interface to the speech recognition, C.6.lines 35-40-resident on a VUI abstracting a plurality of devices, C.4.lines 55-60, C.5.lines 39-54, and C.6.lines 32-55-the natural language through the VUI functions to specific information grammars and lexica from remote locations to operate each of a plurality of local devices, thereby switching grammars, acoustic models). Therefore, one having



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ordinary skill in the art at the time the invention was made would have it obvious to incorporate the combination as taught Junqua with Giuliani into a distributed system as taught by White et al because the data already present in each local device can be updated, replaces or supplemented as desired to modify the voice user interface capability (White et al's col. 3, lines 28-34).

As per claim 2, the combination teaches the plurality of devices coupled to the natural language interface module (Junqua figure 1, his natural language parser 26 and his digital tuner 40 and his recorder 44; White his speech recognition engine 40 and 70)

As per claim 3, Junqua et al wherein the speech recognition module utilizes an N-gram grammar (col. 7, line 65 to col. 8, line 2).

As per claims 4, Junqua et al wherein the natural language interface module utilizes a Probabilistic context free grammar ( figure 1, his natural language parser 26, col. 5. lines 5-11).

As per claims 6-8 (see rejection 1 above) the combination of Junqua with Giuliani and Junqua further teaches wherein the natural language interface abstracts each of the plurality of devices into a respective one of a plurality of grammar...plurality of devices" (Junqua fig. 1, his natural language parser 26 and his digital tuner 40 and his recorder 44, C.2.lines 2-C.3.line 35-Junqua's natural language interface abstracts the plurality of devices, Fig. 2, C.3.lines 54-24-his semantic frame data structure..."whose domain is tuner commands"-is interpreted as his abstraction of devices, one of his digital tuner and recorder), his digital tuner, and recorder-The grammar is necessarily specific to each unit wherein the recorder is associated with specific recording grammar,

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and the tuner is associated with channel selection grammar as the natural language parser, 26, distinguishes between the two respective grammars and lexica, Fig 2-his domain specific knowledgebase, C.3.lines 60-C.4.lines 4-as explained, the natural language input by the speaker "Record me a comedy in which Mel Brooks stars and is shown before January 23<sup>rd</sup>"-enters the "grammar" and commands specific to the recorder, White's col. 4, lines 54 to col. 5, line 3, col. 6, lines 25-55 (each resident VUI may perform "word spotting" by scanning speech input for the occurrence of or more "keywords", and col. 7, lines 10-15, C.4.lines 54-C.6.line 55-White teaches having the natural language interface, C.6.lines 35-40-resident on a VUI abstracting a plurality of devices, C.4.lines 55-60, C.5.lines 39-54, and C.6.lines 32-55-the natural language through the VUI functions to specific information grammars and lexica from remote locations to operate each of a plurality of local devices, thereby White switches grammars, ..., upon receipt of a keyword. Therein searching for the non-prompted open-ended, natural language requests upon the receipt and recognition of an "attention word" or keyword).

As per claims 9 and 10, (see rejection of claim 1), the combination further teaches a grammar module for storing different grammars for each of the plurality of devices (Junqua, his digital tuner 40 and his recorder 44, col. 3, lines 9-17, The grammar is necessarily specific to each unit wherein the recorder is associated with specific recording grammar, and the tuner is associated with channel selection grammar as the natural language parser, 26, distinguishes between the two respective grammars and lexica, Fig 2-his domain specific knowledgebase, C.3.lines 60-C.4.lines 4, White

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col. 5, lines 39-54, col. 6, lines 25-55, col. 7, lines 28-35, C.6.lines 35-40-resident on a VUI abstracting a plurality of devices, C.4.lines 55-60, C.5.lines 39-54, and C.6.lines 32-55-the natural language through the VUI functions to specific information grammars and lexica from remote locations to operate each of a plurality of local devices, White switches grammars, ..., acoustic models from remote sites, upon receipt of a keyword. Therein searching for the non-prompted open-ended, natural language requests upon the receipt and recognition of an "attention word" or keyword).

As per claims 11-16, the combination teaches wherein the device comprises a wireless device interface (White, col. 2, lines 55-64, col. 5, lines 39-47),. an external network coupled to the natural language interface (Junqua, his internet access 64); wherein said 3 dimensional microphone array includes the first microphone ( see Giuliani, his four microphone array)

8. Claims 26-30, and 32-44 are the same in scope and content as claims 1-16 above and therefore are rejected under the same rationale.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lamont M. Spooner whose telephone number is 571/272-7613. The examiner can normally be reached on 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on 571/272-7602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

lms  
7/19/05

  
RICHEMOND DORVIL  
SUPERVISORY PATENT EXAMINER